AMENDMENT TO THE SPECIFICATION

Please amend the following paragraphs in the section of the specification labeled "**BACKGROUND OF THE INVENTION**" as provided below (no new matter has been introduced):

[0013] Tool 016 is provided with electrode 017 having sideways V-shaped (herringbone shaped) projecting portions approximately corresponding in shape and dimensions to the grooves which will be formed on the target surface. The size of sideways V-shaped (herringbone shaped) projecting portions of electrode 017 is usually somewhat smaller than the size of a desired dynamic pressure-generating groove. Tool 016 with projecting electrode 017 is inserted into the inner bore of the workpiece OW such that during electrolytic machining the electrode faces the target machining surface 015 across a tiny gap. Target machining surface 015 will later form the inner circumferential surface of the bearing sleeve. The workpiece OW is accurately positioned for the electro-machining process using stationary fixture 013 and is secured to ~~machining head 02~~machining bed 02.

[0019] In currently utilized electro-machining processes, a different ~~machining head~~machining bed, electrolyte tank, and pulsed power supply have to be provided for each workpiece type. Therefore, it is currently not possible to line up workpieces of the same type or differing types and machine them simultaneously. Therefore, machining has to be performed one item at a time, resulting in poor productivity. It is also currently necessary to adjust settings for each workpiece type that is very time consuming. Furthermore, each time the shape of the workpiece or the shape of the desired dynamic pressure-generating groove is changed, additional time is required for changeover to set the new precise gap width. Therefore, from a productivity and cost standpoint, market demands are not adequately met by currently available electro-machining methods.

Please amend the following paragraphs in the section of the specification labeled "**SUMMARY OF THE INVENTION**" as provided below (no new matter has been introduced):

[0022] In general, in a first aspect, the invention features a method for forming a fluid dynamic pressure groove in a fluid dynamic pressure bearing. The method is accomplished by initially positioning and securing multiple workpieces to be machined to their respective machining devices and imparting an electrochemical dissolving effect to each ~~machined~~ target surface of the multiple workpieces, each of these workpieces serving as a part of the fluid dynamic pressure bearing ~~and~~, and forming at least one fluid dynamic pressure grove on each ~~machined~~ target surface. Each groove may have a specified shape, dimension and surface condition. The same electrolyte is directed from a common electrolyte tank to each machining device used on the multiple workpieces.

[0025] In the provided method for forming a pressure-generating groove, all machining devices for multiple workpieces are located on a common ~~machining head~~machining bed, and machining is accomplished by a pulsed voltage supplied from a machining pulsed power supply.

[0026] As a result, multiple workpieces can be simultaneously machined with a common ~~machining head~~machining bed on a single machining unit (dynamic pressure-generating groove forming device), and when multiple workpieces are multiple components of the same finished product, it is easy to concentrate the required number of each of the component parts, so that manufacturing control is simplified. Controlling the settings for combinations of electrolyte and pulsed voltage to take into account concentration conditions and states of deterioration of the same electrolyte is also made easier, as is quality control over the shape of the dynamic pressure-generating groove formed in the workpiece target work surface. From these standpoints, productivity can be increased as well.

[0028] It is thus possible to set machining conditions for each separate workpiece, thus enabling simultaneous manufacturing of differing workpiece types with a common ~~machining head~~machining bed on a single piece of machining equipment (dynamic pressure-generating groove forming device).

[0030] In general, in a second aspect, the invention features a groove forming device having a means for positioning and securing multiple workpieces to be machined to their respective machining devices; a means for imparting an electrochemical dissolving effect to each ~~machined~~ target surface of the multiple workpieces, each of said workpieces serving as a part of said fluid dynamic pressure bearing; and ~~means~~ a means for forming at least one fluid dynamic pressure grove on said each ~~machined~~ target surface of said multiple workpieces to be machined, said groove having a specified shape, dimension and surface condition. The same electrolyte is directed from a common electrolyte tank to each machining device used on said multiple workpieces.

[0035] As a result, it is possible to simultaneously machine multiple workpieces with a common ~~machining head~~machining bed on a single piece of machining equipment (dynamic pressure-generating groove forming device), so that when multiple workpieces are the multiple parts of the same finished product, it is easy to assemble the numbers of each part, and manufacturing control is made easier. Control over settings of electrolyte and pulsed voltage combinations which take into account concentration conditions and degree of degradation in the same electrolyte is also made easier, and quality control over the shape of the dynamic pressure-generating groove formed in the workpiece target machining surface is simplified, as is quality control over the shape of the dynamic pressure-generating groove formed in the workpiece target machining surface. This aspect also permits an increase in productivity.

[0036] Further, in the groove forming device the pulsed voltage supplied from the pulsed power supply can be independently applied to each of the multiple workpieces. It is thus possible to set different machining conditions for each workpiece, and to manufacture multiple types simultaneously with a common ~~machining head~~machining bed on a single machine (dynamic pressure-generating groove forming device).

Please amend the following paragraph in the section of the specification labeled "**DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENTS AND THE DRAWINGS**" as provided below (no new matter has been introduced):

[0046] As shown in Figure 1, multiple machining devices 3-1, 3-2, 3-3, 3-4,... are aligned on ~~machining head 2~~machining bed 2 in the groove forming device of the present embodiment. Depending on particulars of a specific manufacturing process, these machining devices 3-1, 3-2, 3-3, 3-4 can be different machining devices or multiple units of the same machining device.

[0049] Here, requisite fixtures are arrayed on the same ~~machining head 2~~machining bed 2 in accordance with the shape of workpieces W1, W2, W3, W4, for example, spindle motor rotary shaft, counter plate, etc., as the fixtures 13-1 (Figure 2), 13-2, 13-3 (Figure 3), 13-4 used in the fixture portions 4-1, 4-2, 4-3, 4-4.

[0053] Mounting part 13-1 of fixture portion 4-1 is located on the common ~~machining head 2~~machining bed 2 to accurately position, support and hold securely workpiece W1. As shown in Figure 2, workpiece W1 is a rotary cylindrical member (sleeve) integrated as one part with rotor hub 14 of spindle motor. The inner cylindrical surface of the inner bore of the sleeve is the target machining surface 15-1, and tool 16-1 of electrode portion 6-1 is inserted into the bore so as to face this target machining surface 15-1. Tool 16-1 is supported by the base portion of electrode portion 6-1 projecting downwardly therefrom. Projecting electrode portions 17-1 are formed at 2 positions, top and bottom, of the outer circumferential surface of the tip portion on the rod-shaped electrode portion 6-1. Projecting electrode portions 17-1 include a projecting pattern of sideways Vs (or herringbone shaped protrusions). This sideways V-shaped pattern on projecting electrode portion 17-1 is transferred to target machining surface 15-1 of the cylindrical workpiece W1 by electrolytic machining.

[0057] Mounting part 13-3 of fixture portion 4-3 is located on the common ~~machining head 2~~machining bed 2 to accurately position, support and hold securely workpiece W3. In this embodiment, workpiece W3 is a counter plate used in a fluid dynamic pressure bearing of a spindle motor. Target machining surface 15-3 is the end surface of the counter plate. This target machining surface 15-3 is accurately positioned with respect to projecting electrode portion 17-3 provided on the lower end surface of tool 16-3 of electrode portion 6-3. The pulsed voltage is applied between target machining surface 15-3 and projecting electrode portion 17-3 inducing electrolytic machining of the target surface. The role played by the electrolyte 11 is similar to the case of machining device 3-1 shown in Figure 2.

[0061] Additionally, because each machining device 3-1, 3-2, 3-3, 3-4 of multiple workpieces W1, W2, W3, W4 is disposed on common ~~machining head 2~~machining bed 2, and machining is implemented by a pulsed voltage supplied from machining pulsed power supply 12, multiple workpieces W1, W2, W3, W4 can be simultaneously machined on the common ~~machining head 2~~machining bed 2 of a single machine (dynamic pressure-generating groove forming device 1). When multiple workpieces W1, W2, W3, W4 are multiple parts of the same finished product, it is easy to assemble the parts together simplifying and improving the manufacturing control. Controlling the settings for combinations of electrolyte and pulsed voltage to reflect concentration conditions and states of deterioration of electrolyte 11 is also simplified by the current invention. Also, the quality control over the shape of the dynamic pressure-generating grooves formed in target work surfaces 15-1, 15-2, 15-3, 15-4 of workpieces W1, W2, W3, W4 is simplified.

[0062] Pulsed voltages supplied from pulsed power supply 12 are controlled so as to be independently applied to multiple workpieces W1, W2, W3, W4. Therefore, differing machining conditions can be set for each workpiece, and many types of workpieces can be simultaneously manufactured on a common ~~machining head 2~~machining bed 2 of a single machine (dynamic pressure-generating groove forming device 1).